

Comparison with GLV



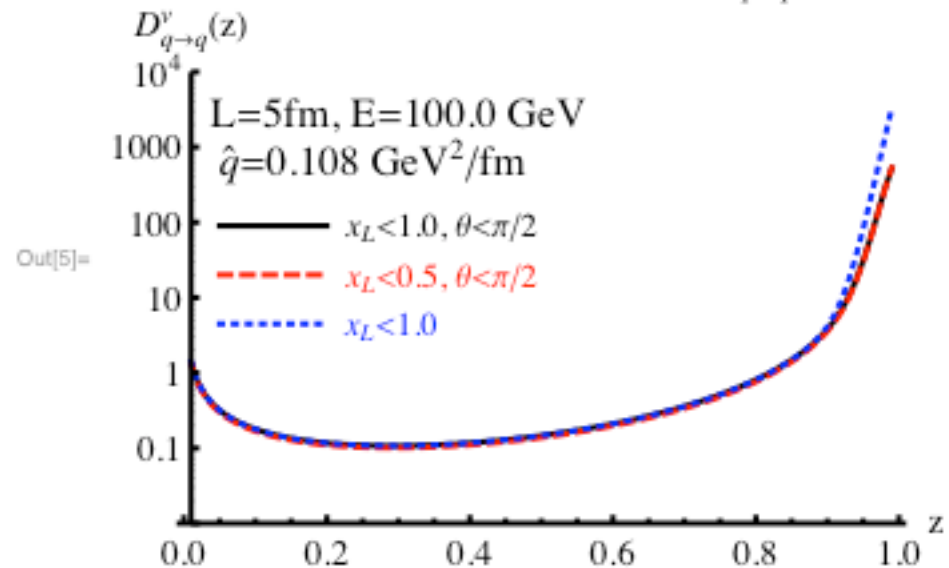
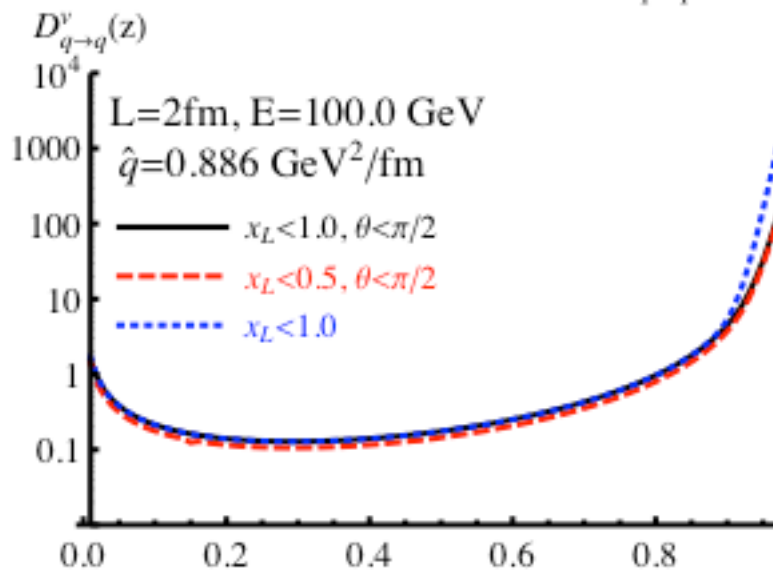
$$\frac{dN_{\text{HT}}}{dz} = \frac{N_c \alpha_s}{\pi} \frac{1 + (1 - z)^2}{z} \int \frac{d\ell_T^2}{\ell_T^4} \int d\xi [c(x_L) \hat{q}(\xi, 0) + \hat{q}(\xi, x_L)] \left[1 - \cos \frac{\ell_T^2 \xi}{2q^- z(1 - z)} \right].$$

$$\frac{dN_{\text{GLV}}}{dz} = \frac{C_A \alpha_s}{\pi} \frac{1 + (1 - z)^2}{z} \int d\xi \rho_A(\xi) \sigma_{qN} \mu^2 \int \frac{d\ell_T'^2}{\ell_T'^2 (\ell_T'^2 + \mu^2)} \left[1 - \cos \frac{\ell_T'^2 \xi}{2q^- z(1 - z)} \right].$$

$$\hat{q} \leftrightarrow \rho_A \sigma_g \mu^2 \quad \rho_A \quad \text{quasi-particle density}$$

variable change: $\ell_{\perp}^2 \rightarrow x_L = \frac{\ell_{\perp}^2}{2q^- \langle \omega \rangle z (1-z)} \quad \langle \omega \rangle = 3T$

$$\frac{dN_{\text{HT}}}{dz} = \frac{N_c \alpha_s}{\pi} \frac{1 + (1-z)^2}{z} \frac{2\hat{q}L}{2q^- \langle \omega \rangle z (1-z)} \int \frac{dx_L}{x_L^2} \left[1 - \frac{\sin(x_L \langle \omega \rangle L)}{x_L \langle \omega \rangle L} \right]$$

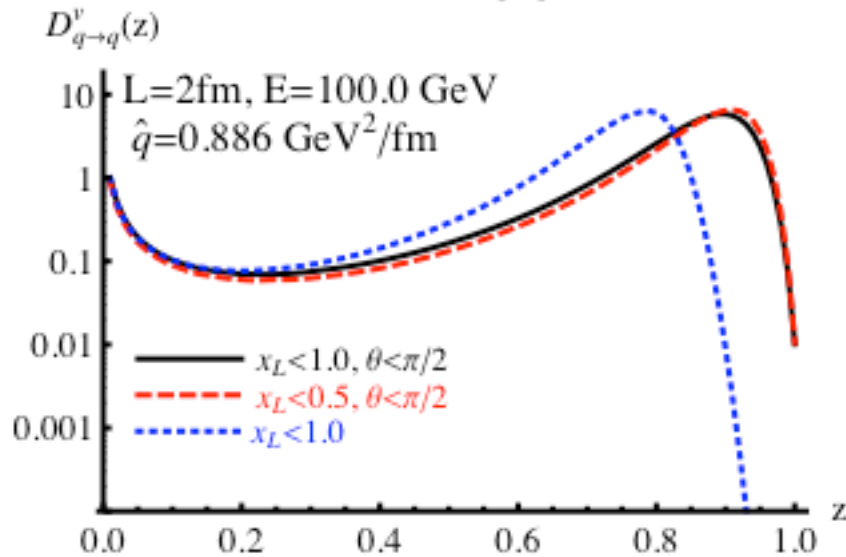


DGLAP multiple emissions

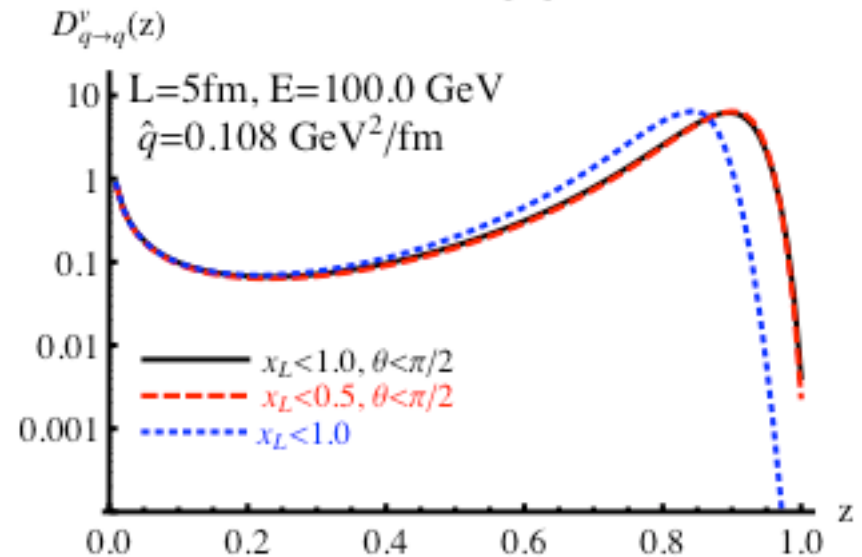


Medium-induced gluon emission only $q \rightarrow q + g$

Only $\Delta\gamma_{q \rightarrow q}$



Only $\Delta\gamma_{q \rightarrow q}$



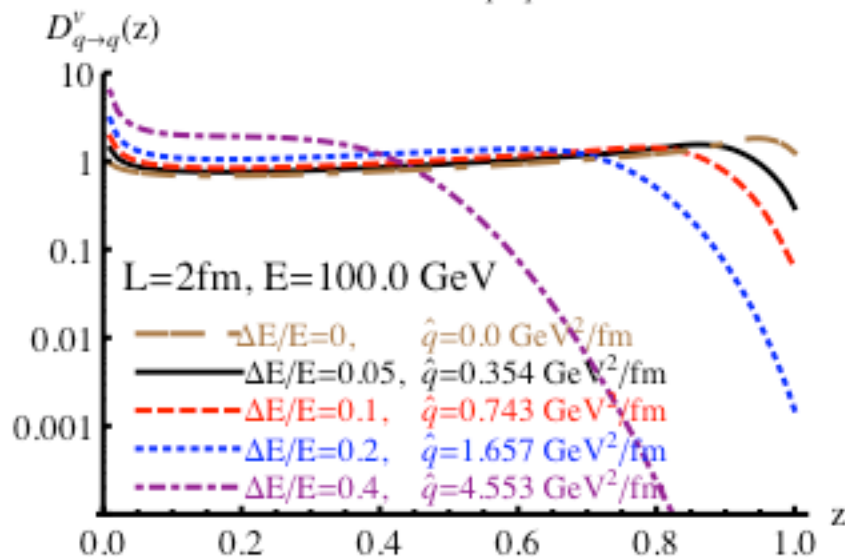
DGLAP multiple emission



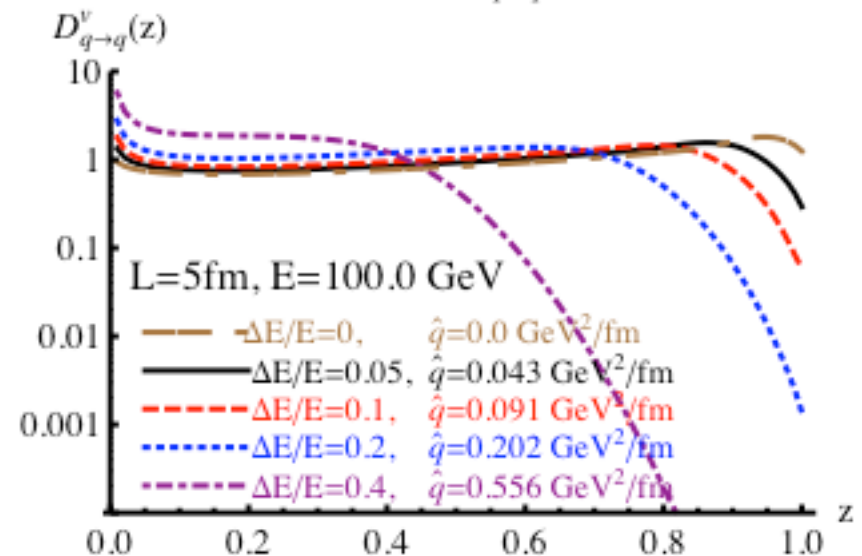
Include both vacuum and medium-induced emission

only consider $q \rightarrow q + g$

Only $\tilde{\gamma}_{q \rightarrow q}$

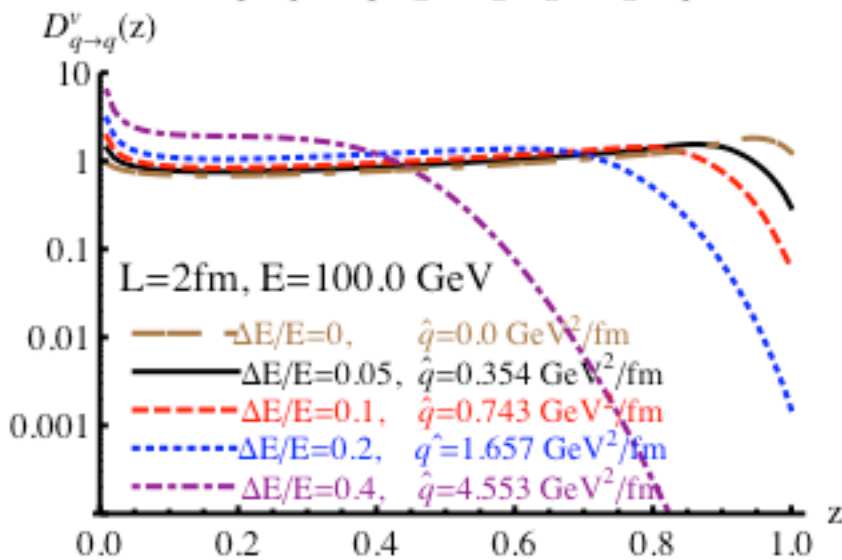


Only $\tilde{\gamma}_{q \rightarrow q}$



Full evolution: Vacuum + medium induced + qqbar pair production + $g \rightarrow g + g$

$$\tilde{\gamma}_{q \rightarrow q}, \tilde{\gamma}_{q \rightarrow g}, \tilde{\gamma}_{g \rightarrow g}, \tilde{\gamma}_{g \rightarrow q}$$



$$\tilde{\gamma}_{q \rightarrow q}, \tilde{\gamma}_{q \rightarrow g}, \tilde{\gamma}_{g \rightarrow g}, \tilde{\gamma}_{g \rightarrow q}$$

